

A panoramic view of the Seattle skyline at dusk. The Space Needle is prominent on the left, illuminated with blue and white lights. The city's skyscrapers are lit up, and the background shows a hazy, purple-tinged sky over the mountains.

Expanding Our Horizons

2010 AACP Annual Meeting and Seminars

American Association of
Colleges of Pharmacy
Discover • Learn • Care • Improve Health

AACP

July 10-14 | Seattle

Inter-Professional Science Education: Development and Implementation of a Course in Translational Research in the Health Sciences

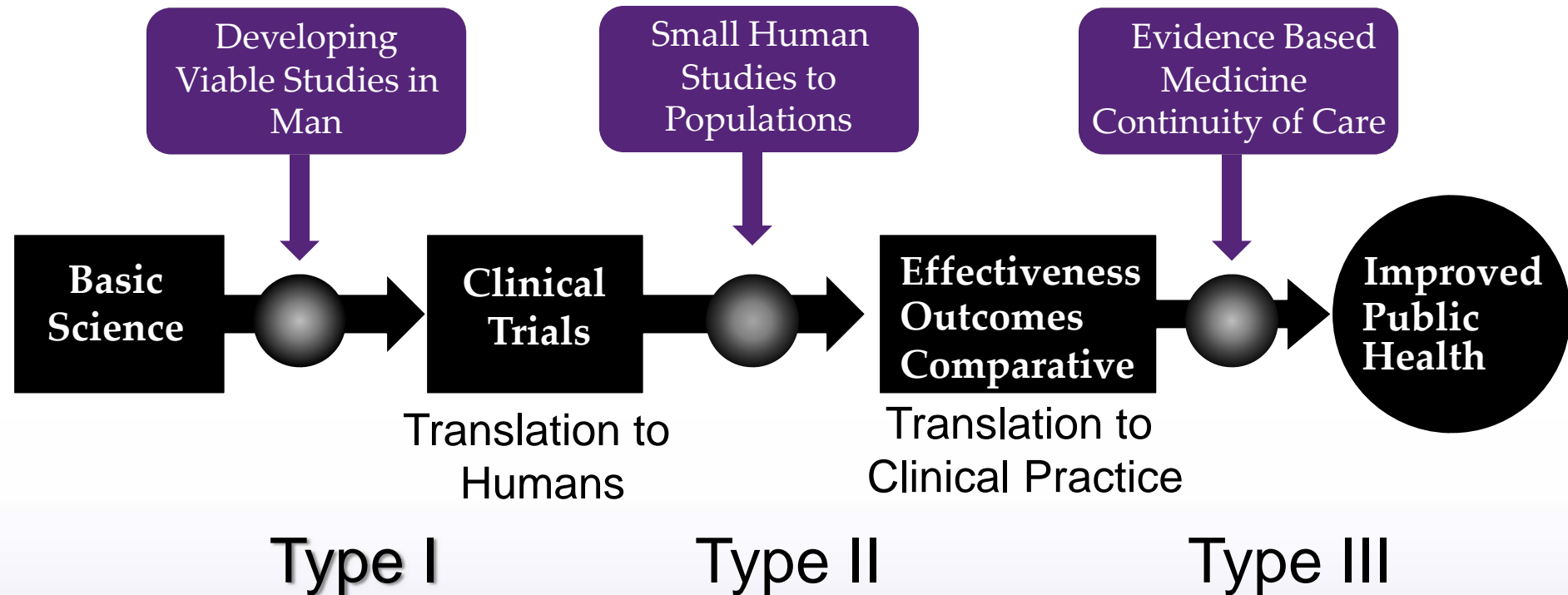
Samuel M. Poloyac, PharmD, PhD

Associate Professor

University of Pittsburgh School of Pharmacy



Translational Research



Adapted from: Crowley WF, Jr., Sherwood L, Salber P, *et al.* Clinical research in the United States at a crossroads: Proposal for a novel public-private partnership to establish a national clinical research enterprise. *JAMA*. 2004;291:1120-1126



Translational Lag

- First discovery to first proven clinical efficacy
- Translational lag was 24 years
 - Non-refuted 17 years
 - Refuted 44 years
- Multi- and trans-disciplinary collaborative groups facilitate translation
- Only 5 out of 101 major discoveries led to proven clinical use

Contopoulos-Ioannidis DG, *et al.* Life Cycle of Translational Research for Medical Interventions. **Science**. 2008 Sept 5; 321: 1298-1299.



Barriers to Translation



- Organizational
- Shortage of translational scientists
- Cultural (silos)
- Inadequate support
- Funding
- Regulatory requirements
- Paucity of partnerships
 - Community
 - Practitioners
 - Industry

Nursing

**Dental
Medicine**

Medicine

Pharmacy

**Rehab
Sciences**

**Public
Health**



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CTSI Educational Core Goals

- Provide early exposure to CTS
- Educate predoctoral and doctoral students in the Schools of the Health Sciences (SHS) to the basics of the CTS discipline
- Provide opportunities for concentration through PhD certificate
- Offer advanced degrees, including PhDs, for individuals who will become future leaders in CTS

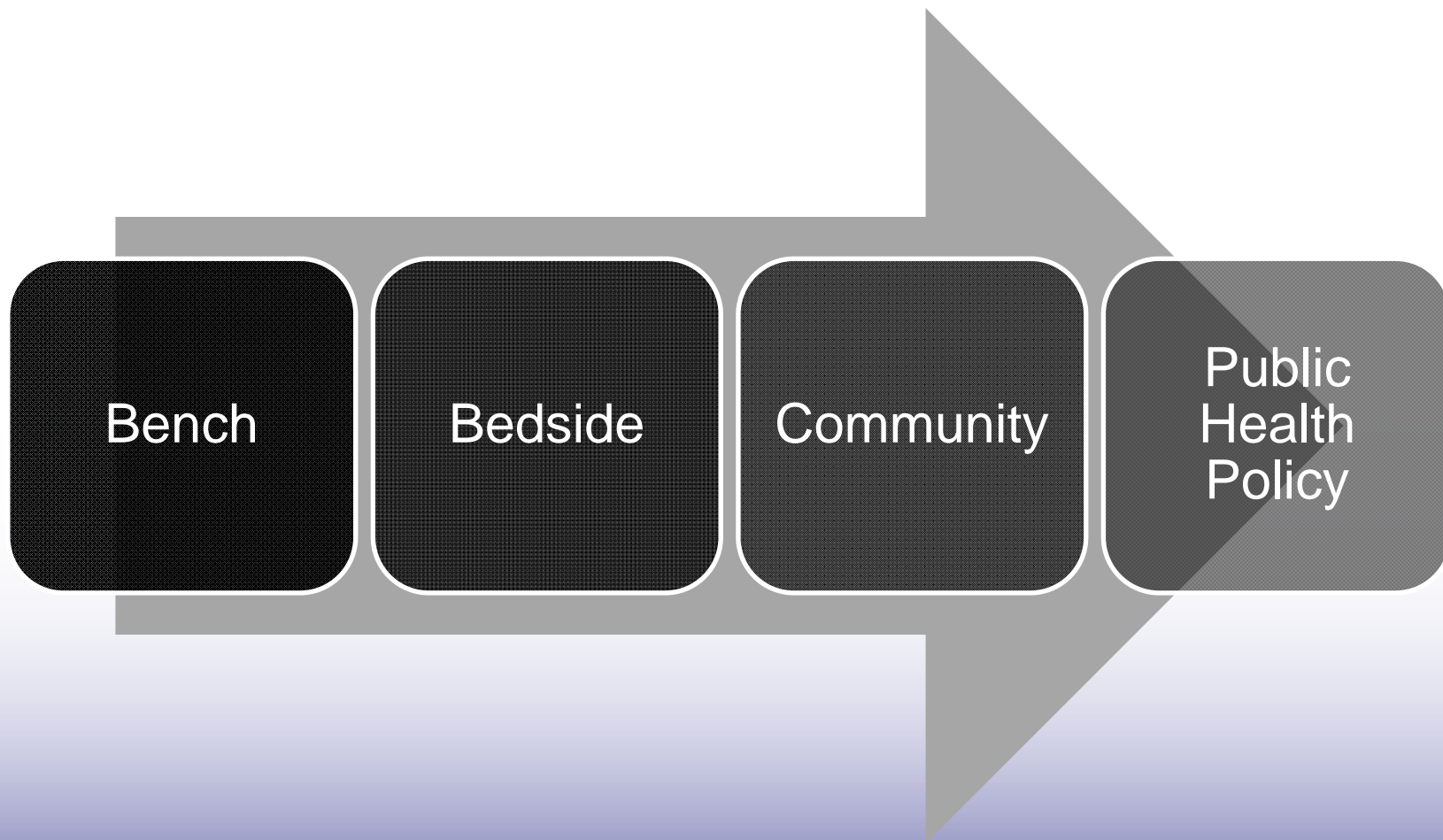


Interdisciplinary Course Development

- Start with an Interdisciplinary Team
- Faculty from Pharmacy, Public Health, Medicine, Nursing, Dentistry, Rehabilitation Sciences
- Over One Year to Develop
- Developed Consensus of 5 Major Course Objective



Revised Objectives



Bench

Bedside

Community

Public
Health
Policy



Advantages of Interdisciplinary Development

- Group Consensus on Objectives
- “Ownership” of Developed Content
- Recruitment and Promotion of Created Course (Course Advocate)



Cross Listed in All Schools of the Health Sciences

- CLRES 3140
- DENT 3111
- HRS 3140
- NUR 3056
- PHARM 3140
- PUBHLT 3000



Course Concept and Creation

- Multi-disciplinary and Multiply Offered
- Broad but not superficial
- Objective: Comprehensive survey of the processes involved in translating research into practices that promote health and prevent disease.



Course Goals

- **Goal #1** : ***Introduce students to the NIH Roadmap and provide the conceptual framework of inter-disciplinary research***
- **Goal #2**: ***Provide perspectives on Healthy People 2010 / 2020, as well as analogous goals at the global level (WHO)***
- **Goal #3**: ***Understand of the models of translational research***
- **Goal #4**: ***Introduce students to the methods of translational and clinical research***
- **Goal #5**: ***Explain and integrate the drug and therapeutic development process***



Course Project

- Type 1 or type 2 translational research area/topic that has the potential to make a major impact on health
 - Defining the health problem.
 - Justifying the line of research selected.
 - Identifying and overcoming barriers.
 - Anticipating the outcomes or impact.
 - Identifying the disciplines involved
 - Articulating the benefit to global health



Course Format

- Hybrid Course
 - Online Video Lectures (25 hours of video)
 - Facilitated In-Class Discussions
- Nine Two-Hour Live Sessions
- Six Online Sessions



Objectives Developed for Each Topic

Topic 5

Drug, Therapeutic and Device Development

1. Students will describe and analyze the process of drug and therapeutic development from discovery through clinical studies
2. Students will discuss post-marketing optimization of drug therapy



Online Lecture: Drug Therapy Optimization

Blackboard Academic Suite

CourseWeb / Bb 7
University of Pittsburgh

Home Help Logout

My CourseWeb Courses Organizations Content Collection Scholar

Announcements
Syllabus
Faculty Info
Groups
Group Wikis
Course Calendar
Course Topics
Introduction
Topic 1
Topic 2
Topic 3
Topic 4
Topic 5
Project Rubric
Extra Credit
Article Library

William E. Evans, Pharm D
CEO & Director, St. Jude Children's Research Hospital

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Online Lecture: Improving Public Health

Common Core_Shanta Zimmer - Panopto Viewer - Windows Internet Explorer


http://coursecast.icre2.pitt.edu/CourseCast/Viewer/Default.aspx?id=0ca8ffb8-37bd-4ec8-a999-cb2fea0aa182

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Common Core Course Videos: Common Core_Shanta Zimmer [login](#) PANOPTO

Slides Screen Capture



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Contents Notes Search Info

- 0:00 Vaccinology: A model of translational research...
- 0:11 Outline ...General Overview of Vaccines Influen...
- 1:11 Vaccine: Any material which confers long □ las...
- 2:13 (auto-generated thumbnail image)
- 2:32 Immunization vs Vaccine
- 3:24 5DISEASE MANIFESTATION...
- 4:22 How do vaccines work? ...Types Live attenuated v

Vaccinology:
A model of translational
research from the bench to the
population and back again

Shanta M. Zimmer, M.D.
Medicine

Outline

- General Overview of Vaccines
- Influenza Biology
- Pandemic Influenza 2009 H1N1
 - Epidemiology
 - Predictions
- Influenza Vaccines
 - Strain Selection
 - Vaccine Development
 - Administration and Acceptance
- Areas of Research
 - Surveillance
 - Safety
 - Modeling
 - Immunology
 - Technology

Vaccine

Vector: Any material which confers long - lasting immunity to a specific antigen or group of antigens following inoculation, and thus prevents or attenuates disease

Vaccine efficacy: The percent reduction in the incidence of disease in a vaccinated population as compared to a similar, unvaccinated population. Best determined by prospective studies, using concurrent, placebo - inoculated controls.

Herd immunity: Disease reduction in unvaccinated subgroups of a population in which a vaccine is being used. A partially effective or partially used vaccine can still provide a substantial reduction in disease by reducing contagion in the community.

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Course Format

- Video Content
- Wikis
- Virtual Chat
- Course Project Rubric



Facilitated In-Class Discussions



Examples of Course Projects

- **Adherence to Patient-Administered Medications in the Era of Targeted Therapy of Cancer**
- *****Achieving Gender Equity in Teen Pregnancy Prevention: Advancing the Development of Male Contraceptive Technologies**



Logistical Problems

- Scheduling!!
- Group Work – Need for Peer Evaluations
- Balancing Expertise



Conclusion

- Clinical Research is an Excellent Topic for Interdisciplinary Education
- Teams Planning Such Courses Must include all Health Science Representatives
- Interdisciplinary Offerings are facilitated by Online Provision of Course Content
- Course Content Should be More Global Versus Specialized



Future Directions

- Use Video Content for to Provide Content for Professional Students in the Health Science Schools
- Continue Graduate Level Offering
- Create Interactive Video Content



Acknowledgements

Steve Reis

Wishwa Kapoor

Donna Ministerman

Nicole Fowler

Judith Erlen (Nursing)

Mary Marizita (Dentistry)

Sandra Quinn (GSPH)

Carol Feghali-Bostwick (Medicine)

Ellen Cohn (Rehabilitation Sciences)

Maggie McDonald (Medicine)

